

SECTION 3.14

Socioeconomics

3.14 Socioeconomics

3.14.1 Introduction and Summary

This section describes the environmental setting and potential impacts from the Proposed Project and Alternatives to socioeconomics in three geographic subregions: LCR, IID water service area and AAC, and Salton Sea. There are no socioeconomic impacts from the Proposed Project or its Alternatives in the SDCWA service area geographic subregion. With the Proposed Project and the Alternatives, SDCWA would receive the same amount of water from IID that it purchased previously from MWD. The objective for SDCWA is to increase the reliability of water supply for its service area. No new infrastructure would be needed for the water transfer because the transfer would be through existing infrastructure in an exchange with MWD. No new storage or distribution systems would be needed in SDCWA's service area. Water supply is not being increased (Reclamation 2002). Therefore, the SDCWA service area geographic subregion is not analyzed in this section. See Section 5 of this EIR/EIS for a discussion of growth inducement.

Socioeconomic data are generally collected and reported at the county level. Therefore, this section presents information according to individual counties within each of the three geographic subregions. When the boundaries of some counties overlap among geographic subregions, the location of the county-related text is referenced.

Data for this section were obtained from the Arizona Department of Economic Security (AZDES), California Department of Finance (CDOF), the California Employment Development Department (CEDD), the California State Board of Equalization (CSBOE), the US Department of Commerce (DOC) Bureau of Economic Analysis (USBEA), and the DOC Bureau of Census (BOC).

Table 3.14-1 summarizes the socioeconomic impacts of the Proposed Project and the four Alternatives. The results are driven by two overriding factors: infusing money into the Imperial County economy in the form of revenues from the water transfer, which would have a beneficial impact, and reducing agricultural production through fallowing land, which would have an adverse effect on the economy. For Alternatives where transfer revenues are used for conservation improvements and agricultural production is not reduced, the net economic impacts are beneficial. For Alternatives that include fallowing, some of the adverse effects of fallowing are offset by beneficial effects of the local expenditure of transfer revenues, but the beneficial effects are not large enough to totally outweigh the adverse effects of fallowing. The magnitude of the beneficial effects would be influenced by the amount of money IID is paid for transferred water as well as how the transfer revenue is applied by IID. The impact analysis evaluates multiple implementations of the Proposed Project and Alternatives to capture the range of beneficial and adverse effects that could result depending on how water would be conserved and the price IID would receive.

TABLE 3.14-1
Summary of Socioeconomic Impacts¹

Proposed Project: 300 KAFY All Conservation Measures	Alternative 1: No Project	Alternative 2: 130 KAFY On-farm Irrigation System Improvements Only	Alternative 3: 230 KAFY All Conservation Measures	Alternative 4: 300 KAFY Fallowing Only
LOWER COLORADO RIVER				
S-1: Potential increase in power rates at Headgate Rock Dam as a result of decrease in LCR flows.	Continuation of existing conditions, including the historic variation of change in LCR flows.	Same as S-1.	Same as S-1.	Same as S-1.
IID WATER SERVICE AREA AND AAC				
S-2: Net addition of 710 jobs and increase in business output of \$55 million with conservation by on-farm system improvements and/or water delivery system improvements only.	Continuation of existing conditions, including the historic variation in agricultural employment levels.	A2-S-1: Net addition of 430 jobs and increase in business output of \$33 million with conservation by on-farm system improvements and/or water delivery system improvements only.	A3-S-1: Net addition of 660 jobs and increase in business output of \$51 million with conservation by on-farm system improvements and/or water delivery system improvements only.	No impact.
S-3: Net loss of 1,400 jobs and reduction in business output of \$98 million with conservation by fallowing only.	Continuation of existing conditions, including the historic variation in agricultural employment levels.	No impact.	A3-S-2: Net loss of 1,090 jobs and reduction in business output of \$76 million with conservation by fallowing only.	Same as S-3.
S-4: Loss of 290 jobs and reduction in business output of \$20 million from conserving IOP water by fallowing only.	Continuation of existing conditions, including the historic variation in agricultural employment levels.	Same as S-4.	Same as S-4.	Same as S-4.
HCP-SS-S-5: Loss of up to 920 jobs and reduction in business output of \$64 million if fallowing is the sole source of mitigation water under HCP-SS.	Continuation of existing conditions, including the historic variation in agricultural employment levels.	A2-HCP-SS-S-2: Loss of up to 1,220 jobs and reduction in business output of \$85 million if fallowing is the sole source of mitigation water under HCP-SS.	A3-HCP-SS-S-3: Loss of 750 to 2,020 jobs and reduction in business output of \$52 to \$141 million if fallowing is the sole source of mitigation water under HCP-SS, depending on method used to conserve water for transfer.	Same as HCP-SS-S-5.

TABLE 3.14-1
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Proposed Project: 300 KAFY All Conservation Measures	Alternative 1: No Project	Alternative 2: 130 KAFY On-farm Irrigation System Improvements Only	Alternative 3: 230 KAFY All Conservation Measures	Alternative 4: 300 KAFY Fallowing Only
SALTON SEA				
S-6: Potential decrease in property values after the year 2035.	Eventual loss of the majority of the recreation-related economic activity as a result of the deterioration of the biological resources that support current recreation activities. Decreased economic activity would put downward pressure on property values.	Same as S-6.	Same as S-6.	Same as S-6.
SDCWA SERVICE AREA				
No impact.	Continuation of existing conditions.	No impact.	No impact.	No impact.

¹ Programmatic level analyses of USFWS' biological conservation measures in LCR subregion are not summarized in the table because no significance determinations have been made. Subsequent environmental documentation will be required if potential impacts are identified.

3.14.2 Environmental Setting

3.14.2.1 Lower Colorado River

For Imperial County data, see Section 3.14.2.2, IID water service area and AAC; for Riverside County data, see Section 3.14.2.3, Salton Sea.

YUMA COUNTY

Population. The Arizona Department of Economic Security estimated the 2000 population of Yuma County at 160,026 (AZDES 2001a). This represents about 3.1 percent of the total population of Arizona. Yuma is the largest city in the county, with an estimated population of 77,515. The second largest city is San Luis, with an estimated population of 15,322 (AZDES 2001a).

Employment. Although agriculture continues to form an important component of the county's economic base, the non-farm sector grew by 2.5 percent annually from 1995 to 2000. The construction sector was the second-fastest-growing sector in the same period with an average of annual growth of 11.5 percent (AZDES 2001b).

LA PAZ COUNTY

Population. AZ DES estimated the 2000 population of La Paz County at 19,715 (AZDES 2001a). This represents about 0.4 percent of the total population of Arizona. Quartsite town is the largest city, with an estimated population of 3,354 (AZDES 2001a).

Employment. Along with agriculture, trade and government account for approximately 75 percent of all jobs in La Paz County. The county's seasonally adjusted unemployment rate was only 7.2 percent for the year 2000 (AZDES 2001b).

3.14.2.2 IID Water Service Area and AAC

IMPERIAL COUNTY

Population. CDOF reported the year 2000 population of Imperial County at 142,361 (CDOF 2001a). The county has seven incorporated cities; the three largest are El Centro, Calexico, and Brawley, with 2000 populations of 37,650, 25,250, and 21,550, respectively. Approximately 77 percent of the county's inhabitants lived in incorporated areas in 2000. Table 3.14-2 shows county and city populations for Imperial County based on 1990 and 2000 census data.

TABLE 3.14-2
Imperial County/City Population Estimates

County/City	1990	1990 Percentage of Total	2000	2000 Percentage of Total
Brawley	18,923	17%	21,550	15%
Calexico	18,633	17%	25,250	18%
Calipatria	2,690	3%	7,475	5%
El Centro	31,405	29%	37,650	26%
Holtville	4,820	4%	5,525	4%
Imperial	4,113	4%	7,200	5%
Westmorland	1,380	1%	1,720	1%
Unincorporated	27,360	25%	32,773	23%
TOTALS	109,303	100.00%	142,361	100.00%

Source: CDOF 2001a

Employment. The civilian labor force in Imperial County in 2000 was 58,500. The primary employment sectors in the county are services, agriculture, and government. Table 3.14-3 shows the 2000 county employment data for the major employment sectors.

TABLE 3.14-3
Summary of 2000 Imperial County Employment Data

Sector	Number Employed	Percentage of Total
TOTAL¹	49,800	100 %
Farm Production	5,200	10%
Farm Services	6,100	12%
Construction and Mining	2,100	4%
Manufacturing	1,900	4%
Transportation and Public Utilities	1,900	4%
Trade	10,400	21%
Finance, Insurance, and Real Estate	1,100	2%
Services	5,700	11%
Federal Government	1,800	4%
State and Local Government	13,700	28%

Source: CDOF 2001a

¹ The numbers in this table include both civilian and military employment.

Table 3.14-4 shows the historic variation in employment during the past 10 years. Over this period, total county employment has ranged from a low of 44,100 in 1992 to a high of 51,000 in 1999. Considering just farm employment (production and services), employment levels ranged from a low of 11,300 in 2000 to a high of 14,500 in 1995, a historic variation of 3,200 agricultural jobs (CDOF 2001).

TABLE 3.14-4
Historic Imperial County Employment by Major Industries, 1991 to 2000¹

Major Industry	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Farm Production	5,600	4,600	4,500	5,000	5,000	4,500	4,800	5,100	6,100	5,200
Farm Services	8,200	7,400	8,200	8,800	9,500	9,300	9,100	9,200	8,200	6,100
Construction & Mining	2,500	2,200	2,000	1,800	1,700	1,600	1,500	1,400	1,400	2,100
Manufacturing	1,700	1,700	1,700	1,900	1,800	1,700	1,800	1,700	1,800	1,900
Transportation & Public Utilities	1,000	1,400	1,600	1,600	1,900	2,100	2,100	2,000	1,900	1,900
Trade	9,000	9,400	9,800	9,800	9,200	9,000	9,200	9,400	9,800	10,400
Finance, Insurance & Real Estate	900	1,000	1,100	1,200	1,200	1,100	1,100	1,100	1,200	1,100
Services	6,500	5,700	5,600	5,500	5,100	5,200	5,400	5,500	5,800	5,700
Federal Government	1,100	1,200	1,200	1,200	1,200	1,400	1,500	1,600	1,700	1,800
State & Local Government	8,100	9,600	10,500	11,600	12,000	12,100	12,500	12,800	13,100	13,700
Total, All Industries	44,600	44,100	46,200	48,400	48,500	47,900	48,800	49,700	51,000	49,800

Source: CDOF 2001a

¹ The numbers in this table include both civilian and military employment.

The average unemployment rate in the civilian labor force in Imperial County for 2000 was 26.3 percent, the highest of all California counties and more than five times the state average of 4.9 percent (CEDD 2001b). Historically, Imperial County has had one of the highest unemployment rates in the state, approaching 30 percent during the 1990s.

Recreation-based activities associated with the Salton Sea are mainly concentrated in Imperial County (see Section 3.6, Recreation). Recreational activities stimulate the purchase of goods and services, which affects other sectors of the county's economy and often provides direct employment. Recreation does not correspond to a single employment sector in the data used for this analysis (see Table 3.14-4 for the employment categories for county data reported). Less than 2 percent of the employed persons in the Salton Sea geographic subregion, however, are employed in businesses that cater to the recreation-based industry.

Agriculture and government provide more than 50 percent of Imperial County's jobs. Agriculture employs approximately 11,300 people, and government sectors (federal, state, and local) employ approximately 15,500 people. The trade sectors employ 21 percent of the labor force, accounting for 10,400 jobs.

Finance. Taxable retail sales in Imperial County for 1999 were \$871.2 million (CDOF 2001d). This represented about 0.3 percent of total state sales. The current sales tax rate in the county is 7.5 percent.

Property taxes levied in Imperial County totaled \$63 million in 1990-2000. Of this total, approximately 7 percent of revenues went to city governments, 17 percent to the county, 63 percent to school districts, and 13 percent to other districts (CSBOE 2001). Table 3.14-5 shows the allocations of property taxes.

TABLE 3.14-5
Allocation of Imperial County Property Tax Levies 1997-2000 (\$ Thousands)

Recipient	Amount	Percentage of Total
City	4,669	7%
County	10,493	17 %
School	39,906	63 %
Other District	7,955	13 %
TOTAL	63,023	100.00 %

Source: CSBOE 2001

Value of Business Output. Estimates of the total business output of Imperial County are derived from the IMPLAN PRO data set that was used to model the impact of the Proposed Project and Alternatives (see Section 3.14.3.1, Methodology, for the description of the IMPLAN PRO model). The base data provided by IMPLAN PRO were modified for some agricultural production sectors to be consistent with the 12-year historic average conditions of Imperial County. The modifications were based on data from Imperial County Agricultural Commissioner's reports; more information on the modifications can be found in Appendix G. Table 3.14-6 shows the estimates of value of industry output that are used as the Baseline for the impact analysis modeling. A report published in 1989 and based on survey data from 1987 estimates that Salton Sea recreation activities contribute about \$80 million to the value of business output of the Imperial and Riverside County economies (CIC Research 1989).

TABLE 3.14-6
Value of Industry Output for Imperial County

Economic Industry Sector	Value of Industry Output (\$ Millions)
Agriculture	1,428.46
Mining	20.471
Construction	213.172
Manufacturing	407.538
Transportation, Communication, Public Utilities	356.458
Trade	535.451
Finance, Insurance, and Real Estate	417.339
Services	589.199
Government	835.826
Other	0.582
Totals	4,804.49

Source: Minnesota Implan Group (MIG), with modifications
Source: CDOF 2001e; USBOC 2001

3.14.2.3 Salton Sea

The Salton Sea lies partly in Imperial County and partly in Riverside County. For Imperial County data, see Section 3.14.2.2, IID Water Service Area and AAC.

RIVERSIDE COUNTY

Population. CDOF reported the year 2000 population of Riverside County at 1,545,387. The population is concentrated in the western portion of the county, with closer economic ties to the metropolitan Los Angeles area than to the Salton Sea geographic subregion. The county has 24 incorporated cities. The largest three are Riverside, with a population of 225,166; Moreno Valley, with 142,381; and Corona, with 124,966. In the general vicinity of the Salton Sea, the larger population centers include Coachella (22,724), Indio (49,116), and Palm Desert (41,155). When combined, these population centers account for approximately 10 percent of the total county population (CDOF 2001a).

Employment. The civilian labor force in Riverside County in 2000 was 731,400. The average unemployment rate was 5.5 percent, slightly above the state rate of 4.9 percent (CEDD 2001a). The primary employment sectors are services, trade, and government, which account for almost 70 percent of all jobs in the county. Table 3.14-7 shows 2000 employment data by sector.

The services sector employed 127,000 people (approximately 27 percent), whereas the government sector (federal, state, and local) employed 83,600 people (approximately 18 percent). The trade sector employed 111,200 people or approximately 24 percent of the 2000 labor force.

TABLE 3.14-7
Summary of 2000 Riverside County Employment Data

Sector	Number Employed	Percentage of Total
Farm Production	9,700	2
Farm Services	8,000	2
Construction	46,200	10
Mining	400	0
Manufacturing	53,800	11
Transportation and Public Utilities	13,800	3
Trade	111,200	24
Finance, Insurance, and Real Estate	14,400	3
Services	127,000	27
Federal Government	6,800	2
State and Local Government	76,800	16
TOTAL¹	468,000	100

Source: CEDD 2001a

¹ The numbers in this table include civilian and military employment.

3.14.3 Impacts and Mitigation Measures

3.14.3.1 Methodology

Neither CEQA nor NEPA requires assessment of project effects that are purely economic or social unless there are related physical effects (State CEQA Guidelines, §§ 15064(e), (f)16, 15131, 15358; 40 CFR § 1508.14). However, if a project would have significant physical effects on the environment, economic and/or social impacts could result, and a socioeconomic assessment may be appropriate. Based on concerns raised during the scoping process about potential socioeconomic effects of the Proposed Project, particularly in Imperial County, a detailed socioeconomic assessment is included in this EIR/EIS.

The methodology used to support the socioeconomic analysis of the Proposed Project and Alternatives is based on a regional economic model using the software and data package IMPLAN PRO. IMPLAN PRO is an input-output (I-O) model that estimates the total impacts to a regional economy of changes to local business conditions, expenditures, or employment levels. Although the Proposed Project will be implemented over a period of up to 75 years, the entire socioeconomic impact analysis is conducted in 2001 dollars because use of present value is standard for socioeconomic analysis.

Economic changes are estimated and used as inputs to the IMPLAN PRO model, which predicts the total effects on the regional economy. The effect of the Proposed Project and Alternatives on the regional economy are evaluated using: (1) changes in employment; and (2) the value of business output as the primary indicators. More detailed results of the impact analysis, including a breakdown of the total effect into the I-O components of direct, indirect, and induced effects, are reported for each economic sector in Appendix G.

To identify and assess the range of potential impacts, a set of illustrative scenarios was constructed for this socioeconomic analysis using three major factors in the Proposed Project and Alternatives that would drive socioeconomic effects in Imperial County:

- Construction and operation of on-farm irrigation system and water delivery system improvements using water transfer revenues received by IID from water recipients (these measures would generally result in beneficial effects on the Imperial County economy);
- Use of fallowing to conserve water (fallowing would generally result in adverse effects on the Imperial County economy); and
- Payment agreements for conserved water; that is, whether SDCWA receives and pays for all of the conserved water under the IID/SDCWA Transfer Agreement, or whether, under the QSA, water is received and paid for by CVWD and/or MWD. A different pricing formula than the one outlined in the IID/SDCWA Transfer Agreement applies if CVWD and MWD are receiving transferred water under the QSA. The QSA specifies base prices that are escalated to account for inflation over the duration of the Proposed Project. Specifically, if CVWD purchases the first 50 KAFY of water from IID, IID is paid a base price of \$50 per AF. If CVWD purchases the second 50 KAFY of water from IID, IID is paid a base price of \$125 per AF. If CVWD does not purchase water from IID under the QSA, MWD could purchase the water at a base price of \$125 per AF.

These economic changes would affect the Imperial County economy and are discussed in the subsections on the IID water service area and AAC geographic subregion below.

Impacts attributed to changes in the elevation or salinity of the Salton Sea are discussed in the Salton Sea geographic subregion, even though some of these economic impacts might be incurred in Imperial County as well as in Riverside County.

The illustrative scenarios are shown in Table 3.14-8. They are designed to represent a range of economic impacts from the Proposed Project and the various Alternatives. For example, for the Proposed Project, the worse-case economic impact would be that all conservation is achieved by fallowing, which would have the maximum adverse impact on agricultural production in Imperial County. Generally, infusing money into the Imperial County economy in the form of water transfer revenues would result in a beneficial effect. The magnitude of the beneficial effect would be influenced by the amount of revenue IID receives for the transferred water and how IID applies the transfer revenue in its water service area. Therefore, the worst-case economic impact in Imperial County would result if the first 50 KAFY of water conserved under the QSA were transferred to CVWD rather than to MWD. (The IID/SDCWA Transfer Agreement and the QSA are both summarized in Appendix A.)

TABLE 3.14-8
Scenarios for Economic Analysis

	Quantity Conserved (KAFY)	Conservation Program			Destination		
		On-Farm Irrigation System Improvements	Water Delivery System Improvements	Fallowing	SDCWA	CVWD ¹	CVWD / MWD ²
Proposed Project A – Beneficial effect without QSA	300	230	70		300		
Proposed Project B – Beneficial effect with QSA	300	230	70		200		100
Proposed Project C – Adverse effect without QSA	300			300	300		
Proposed Project D – Adverse effect with QSA	300			300	200	50	50
Alternative 1- No Project	0	0	0	0			
Alternative 2	130	130			130		
Alternative 3A- Beneficial effect	230	230			130		100
Alternative 3B – Adverse effect	230			230	130	50	50
Alternative 4A- Adverse effect without QSA	300			300	300		
Alternative 4B – Adverse effect with QSA	300			300	200	50	50

¹ IID is paid a price of \$50 (in 1999\$ escalated at 2.5%) for the first 50 KAFY to CVWD.

² IID is paid a price of \$125 (in 1999\$ escalated at 2.5%) for the second 50 KAFY to CVWD and/or MWD.

The best case for the Proposed Project is that all conservation would be accomplished through on-farm irrigation system and water delivery system improvements and that SDCWA would receive all 300 KAFY.¹ Alternative 1, No Project, would include no conservation or transfer and thus no economic effects as compared to the Baseline.

¹ This is the first scenario under the Proposed Project “IID/SDCWA Transfer Agreement Implementation Only.” See Section 2, Description of the Proposed Project and Alternatives, for additional details on the two scenarios that could occur under the Proposed Project.

Under Alternative 2, the QSA would not be in effect, and SDCWA would receive the entire 130 KAFY of conserved water. Fallowing would not be allowed, and the best economic case is that all conservation would be achieved through on-farm system improvements.

Under Alternative 3, the best case would be to conserve 130 KAFY of water using on-farm system improvements and transfer that conserved water to SDCWA. In addition, MWD would receive 100 KAFY at the base price of \$125 per AF. The worse case for Alternative 3 would be to rely on fallowing for the entire 230 KAFY; SDCWA would receive 130 KAFY, CVWD would receive the first 50 KAFY at the base price of \$50 per AF, and either CVWD and/or MWD would receive the second 50 KAFY at the base price of \$125 per AF.

Alternative 4 involves conservation only by fallowing, so the best and worst cases are generated by whether the QSA would be in effect or not. Alternative 4 has the same impact as the fallowing scenarios of the Proposed Project.

For each scenario in Table 3.14-8, the annual changes in local expenditures and agricultural production relative to the Baseline were estimated for each year of the Proposed Project's 75-year duration. These 75-year annual impact levels are averaged into seven program year-blocks that were analyzed using IMPLAN PRO.

The first six of the seven program year-blocks each represent an average of 5 years worth of annual changes in expenditures and/or agricultural output. These six program year-blocks cover program years 1 to 30, during which the schedule to achieve the maximum conservation quantity for each of the scenarios would occur. These first six program year-blocks also represent the period over which conservation measures would be implemented and would represent combinations of construction and operation impacts. The seventh program year-block represents the average impact of years 31 to 75. This single, large program year-block is used because annual impact levels would vary less during this period of the Proposed Project because maximum conservation levels would have been reached for the scenarios and because all construction of on-farm and water delivery system improvements would have been completed. Therefore, this seventh program year-block would represent an operations impact for the Proposed Project and all Alternatives.

Changes in business activity that would be caused by the scenarios for the Proposed Project and Alternatives are attributed to one of the following three economic change categories, which are individually modeled to estimate their impact on the regional economy:

- **Non-Agricultural Sectors** – Changes in local expenditures for goods, materials, and services associated with the construction, operation, maintenance, and replacement of on-farm and water delivery system improvements.
- **Transfer Revenue Expenditures** - Changes in the local expenditure of disposable income by farmers participating in the water conservation program.
- **Agricultural Production Sectors** - Reductions in agricultural output resulting from the fallowing of agricultural lands.

Non-Agricultural Sectors. Implementation of on-farm irrigation system and water delivery system improvements would result in annual direct expenditures within the economy for the goods and services required to construct, operate, and maintain the on-farm

improvements and water delivery system improvements. The estimated level of these annual direct expenditures would vary over time and among Proposed Project and Alternatives scenarios.

Because the conservation program is voluntary, it is not possible to predict the exact conservation measures participating farmers would employ, nor is it possible to predict when on-farm irrigation system improvements would be implemented. For the purpose of this analysis, it is assumed that on-farm irrigation system improvements would be in the form of permanent TRS (see Section 2 for a description of TRS). This assumption is made because this particular on-farm irrigation system has a proven track record in the IID water service area and could be applied to all combinations of cropping patterns, soil types, and field slopes that are found in the subregion.

To identify the number of TRS that would be required to conserve a given quantity of water, it is assumed that if a TRS was installed and operated on a standard 80-acre field, the system would conserve 53 AFY. This estimate assumes a standard 80-acre field will have 75 irrigated acres, and that the use of the TRS irrigation method will conserve 0.71 AF per irrigated acre. The estimate of per-acre conservation used for this analysis is derived from data used in IID's hydrologic model of the IID water service area (see Appendix E). The analysis assumes that once a farmer installs a TRS on a field, it would remain in operation for the duration of the Proposed Project (75 years).

The use of other on-farm irrigation system improvements would have somewhat different impacts than those described for a TRS. The hydrologic model that IID has developed indicates that, at most, on-farm irrigation system improvements could conserve a maximum of 230 KAFY.

IID has indicated that if water delivery system improvements were implemented to conserve water for the transfer, IID would construct and operate seepage recovery systems and lateral interceptor systems. Additionally, IID has indicated that it would construct the seepage recovery systems before installing lateral interceptor systems. The hydrologic model indicates that these types of two water delivery system improvements could conserve a maximum of 100 KAFY: 15 KAFY from seepage recovery systems and 85 KAFY using a combination of lateral interceptor systems.

The annual change in business activity has been estimated based on the timing of installations of lateral interceptor systems, seepage recovery systems, or TRS. These annual industry output changes are aggregated into the seven program year-blocks and used as inputs into IMPLAN PRO. A detailed discussion of the industries used to model impacts, and the initial economic change levels for each year and for the seven program year-blocks, can be found in Appendix G.

Transfer Revenue Expenditures. To conserve water for transfer, IID would compensate farmers for participating in the water conservation program by undertaking voluntary on-farm irrigation system improvements or fallowing lands. A portion of the compensation paid to farmers, in excess of what it costs them to conserve water, would be spent in Imperial County as disposable income. This increase in disposable income expenditures would have a beneficial effect on the local economy.

Disposable income will vary depending on the level of compensation paid to participating farmers for conserving water and the costs they incur to conserve water. For this analysis it is assumed that farmers will conserve water either by fallowing land or by installing TRS irrigation systems.

The actual distribution of transfer revenues has not been identified by IID and might vary over the term of the Proposed Project. Some dollar value must be estimated to evaluate the potential impact; therefore, for this analysis it is assumed that all transfer revenues not spent by IID on water delivery system improvements, program administration, or environmental or mitigation measures pursuant to the Final EIR/EIS or HCP will be passed on to participating farmers. The prices IID is paid for transferred water depend on which water agencies receive the water and will vary over time. Using a formula that allows IID to cover all program costs, farmer compensation level per acre-foot was calculated for each scenario. The farmer compensation price and estimates of farmer conservation were used to calculate the total annual transfer revenue paid to farmers. This amount may vary depending on the type of conservation a farmer uses and is therefore reduced to account for the cost farmers incur in conserving water to produce a before tax level of net transfer income.

Because disposable income is income that is actually spent in the economy, the before-tax level of transfer income must be reduced by estimated tax payments and savings. An additional adjustment is made to account for some of the transfer income leaving the Imperial county economy through out-of-county expenditures. This after-tax and after-savings level of transfer income is further reduced to account for out-of-county expenditures greater than the amount included in the IMPLAN PRO relationships. It is assumed there would be greater out-of-county expenditures because of out-of-county land ownership and because of county residents spending transfer revenues out of the county at a rate greater than assumed in the IMPLAN PRO relationships. Appendix G discusses in detail the prices IID would receive and the formula used to calculate the assumed farmer compensation levels used in this analysis.

This transfer revenue expenditures category would be sensitive to the level of compensation IID pays to farmers to conserve water. The analysis currently assumes that enough money is retained by IID to cover up to \$30 million for environmental mitigation, which is consistent with the amount anticipated in the IID/SDCWA Transfer Agreement but might not be the actual cost of environmental mitigation. If additional funds are retained from transfer revenues to pay for environmental mitigation in excess of this amount, the beneficial effects of transfer revenue expenditures would be smaller than reported here.

Agricultural Production Sectors. For the purposes of this analysis, it is assumed that when farmers participate in the water conservation program by installing TRS, they would continue to grow the same crops that have historically been grown, using the same cropping patterns. This assumption is reasonable because of the long-term nature of the water conservation program and the difficulty of predicting future changes in cropping patterns for crops that are, to a large extent, influenced by world markets.

If farmers were to install on-farm irrigation system improvements, the construction, operation, and maintenance of the improvements would affect their production costs. However, the regional impact of those changes would be captured in the non-agricultural sectors expenditures section as changes in the costs associated with the operation and

maintenance of the system improvements. Therefore, it is assumed that for regional economic impact modeling, changes in agricultural production would only occur in scenarios that include fallowing

In scenarios in which fallowing is included as a conservation measure, reductions in agricultural output would have adverse effects on the economy. Estimates of these impacts have assumed that reductions in agricultural output would be consistent with the percentage of non-permanent crops that have historically been grown in the IID water service area. The reason for using non-permanent crops is that farmers are unlikely to fallow areas with permanent crops, such as orchards, because of the large investment in such crops. The historical crop pattern was used because the actual future participants in a voluntary fallowing program cannot be identified in advance with certainty, and IID believes it is reasonable to assume that the program will involve a range of crops through the IID water service area. If the actual mix of fallowed lands includes a higher percentage of less valuable crops, the impacts could be less than what are reported, and if a higher percentage of more valuable crops were fallowed, the impacts could be greater.

All crops that are grown in the IID water service area are categorized according to one of the agricultural production sectors used in IMPLAN PRO. Using these assumptions and historic IID data from 1987 to 1999, the percentage of total non-permanent crops for each IMPLAN PRO crop group was calculated. These percentages are shown in Table 3.14-9.

TABLE 3.14-9
Acreage-weighted Average Value of Production Estimates

Crop Group	Percent of Total Non-Permanent Crops^a	Estimated Gross Value Per Acre^b
Cotton	2%	1,003
Food Grains	13%	425
Hay and Pasture	51%	444
Grass seed	5%	638
Vegetables	22%	3,400
Sugar	7%	1,227

Source:

^a IID 1987 - 1999 and CH2M HILL calculations (IID). Annual Inventory of Areas Receiving Water.

^b CASS and CH2M HILL calculations (California Agricultural Statistics Service (CASS). 1999. "Summary of County Agricultural Commissioners' Report, Gross Values of Agricultural Production--California." August 1999.

IMPLAN PRO uses changes in the industry level gross value of production as initial economic changes. To estimate changes in value of production, the average value per acre was estimated for each crop group included in the analysis. These per-acre value estimates were based on Imperial County agricultural commissioners' data from 1987 to 1998. Individual crops were allocated to each of the crop groups. The values in Table 3.14-9 represent acreage-weighted average values of production estimates.

To identify the total acreage that would need to be fallowed to conserve a given quantity of water, it is assumed that each acre fallowed would conserve 5.63 AF of water. This estimate is based on historic water use patterns and was determined using IID's hydrologic model,

which was developed for the conservation and transfer program (see the description of the IIDSS in Appendix E).

Subregions Excluded from the Impact Analysis. With the Proposed Project and Alternatives, SDCWA would receive the same amount of water from IID that it purchased previously from MWD. The objective for SDCWA is to increase the reliability of water supply for its service area. No new infrastructure would be needed for the water transfer because the transfer would be through existing infrastructure in an exchange with MWD. No new storage or distribution systems would be needed in SDCWA's service area. Water supply is not being increased (Reclamation 2002). Therefore, the SDCWA service area geographic subregion is not analyzed in this section (see Section 5 of this EIR/EIS for the growth-inducement analysis).

3.14.3.2 Interpretation of Results

Certain features of the modeling effort are important to note in interpreting the results of the analysis in this section. As discussed in Section 3.14.3.1 above, the annual changes in local expenditures and agricultural production were calculated for each scenario in Table 3.14-9 for each of the 75 years of the term of the Proposed Project. These annual results were then averaged into six 5-year blocks covering the first 30 years of the Proposed Project and a seventh 45-year block for years 31 through 75. The six 5-year blocks and the seventh 45-year block were then analyzed in IMPLAN PRO. IMPLAN PRO takes input data and predicts equilibrium economic conditions. If the input conditions for any 5-year block were to continue unchanged into the future, the eventual equilibrium economic conditions would be similar to the IMPLAN PRO results for that 5-year block. However, during the first 30 years of the Proposed Project, the actual changes in local expenditures and agricultural production will vary each year as conservation quantities are increasing and improvements are being constructed. Therefore, the equilibrium conditions predicted by the model for a 5-year period would not be reached because the model inputs are continually changing.

For the 45-year period, however, the input conditions are relatively stable because the conservation quantities would have reached their maximum for the scenarios and the construction of on-farm and delivery system improvements would have been completed. Therefore, the model results for this 45-year block could be considered to represent the equilibrium that the economy would actually reach.

Two measures of the economic effects of the Proposed Project and Alternatives are discussed: (1) changes in employment in the seventh 45-year block; and (2) changes in business output. These are two different ways to measure the same impact on the economy and should not be added together in assessing the economic impacts of the Proposed Project and Alternatives.

There are no accepted or standard criteria for assessing the significance of potential beneficial and adverse economic impacts, and significance assessments are not required or made in this analysis. The analysis presents the estimated effects of the Proposed Project and Alternatives.

3.14.3.3 Proposed Project

The installation and operation of on-farm irrigation system improvements or water delivery system improvements, or the fallowing of agricultural land, would each have impacts on the Imperial County economy. The nature and magnitude of the effects are dependent on the mix of conservation measures implemented as well as the recipient of the conserved water because the price payable for the water varies.

Four scenarios have been analyzed to present the full range of potential impacts of the Proposed Project. Proposed Projects A and B both assume that all 300 KAFY are conserved by on-farm irrigation system improvements and water delivery system improvements. On-farm conservation contributes 230 KAFY and water delivery system improvements conserve the remaining 70 KAFY. Proposed Project A represents the scenario in which the QSA is not in effect and all conserved water is transferred to SDCWA.

Proposed Project B assumes that the QSA is in effect and a total of 100 KAFY are transferred to CVWD and/or MWD. To provide the greatest beneficial impact, it is assumed that CVWD does not purchase the first 50 KAFY; therefore, IID would be paid the base price of \$125 for the entire 100 KAFY. The two scenarios are presented to highlight the impact the different ramp-up schedules and different transfer prices have on the local economy.

In Proposed Projects C and D, fallowing is used to conserve all 300 KAFY for transfer, with a total of approximately 50,000 acres fallowed. Proposed Project C assumes all water is transferred to SDCWA. Proposed Project D assumes that 200 KAFY are transferred to SDCWA and the remaining 100 KAFY are transferred to CVWD and/or MWD. To create the worst-case impact, it is assumed that CVWD would purchase the first 50 KAFY at the \$50 per AF base price and the second 50 KAFY would be purchased by CVWD or MWD at the \$125 per AF base price. The IID/SDCWA Transfer Agreement would need to be modified before Proposed Project C or D could be implemented.

LOWER COLORADO RIVER

Water Conservation and Transfer

Impact S-1: Potential increase in power rates at Headgate Rock Dam as a result of decrease in LCR flows. As stated in Section 3.12, Public Services and Utilities, reducing the flow over Parker Dam could result in impacts to power generation capacities at Headgate Rock Dam. The IA EIS describes the average percentage of lost energy due to the IA (changing the point of delivery of approximately 388 KAF) as 5.37 percent. Diversion of up to 300 KAFY would result in proportionately less lost energy and therefore less impact on power generation losses. The impact to power generation from changing the diversion point for up to 300 KAFY would fall within the operation range. However, a decrease in power generation could also have a potential impact on Headgate Rock Dam rates if the rates are based on an estimated 100 percent of energy generated at Headgate. At that time, BIA would have to purchase power from another source to meet projected, additional demand. Depending on the open market rate for energy at the time, there could be an economic impact to CRIT. The future economic impacts, however, which would depend on future energy costs, are too speculative to describe in this EIR/EIS.

Biological Conservation Measures in USFWS' Biological Opinion

Implementation of these conservation measures would not affect population or housing because they would involve fish stocking or fish rearing or the conversion of non-native vegetation or agricultural land to habitat suitable for endangered species. No housing would be displaced or created, nor would any population changes occur. Constructing or restoring backwaters would create a small, short-term increase in employment opportunities, as would creating willow flycatcher habitat. The creation of this habitat could result in the loss of between 372 and 1,116 acres of agricultural land, and the creation of backwaters could result in the loss of 44 acres of agricultural land, depending on the site(s) selected. This could result in the loss of some agricultural employment opportunities. Approximately 30,000 persons are employed in agriculture in the counties that border the Colorado River, and the number of jobs that could be lost would be small in relation to the total number in the Project area. The loss of revenue from the removal of up to 1,156 acres of land from production would have a minor impact on the local economy given the amount of land still in production. Any land acquired for this purpose would come from willing sellers, and fair compensation would be provided pursuant to federal regulations (Reclamation 2002).

Impacts resulting from the implementation of the biological conservation measures in USFWS' Biological Opinion would be the same for Alternatives 2, 3, 4; therefore, they are not discussed under each Alternative.

IID WATER SERVICE AREA AND AAC

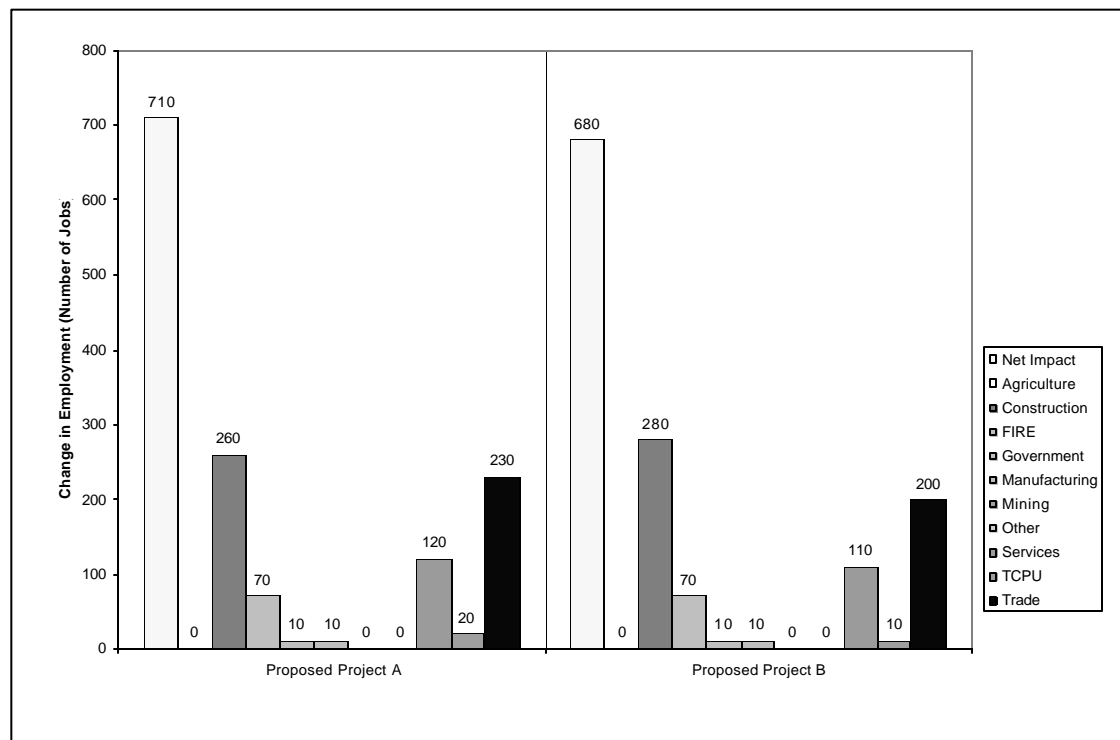
Water Conservation and Transfer

Impact S-2: Net addition of 710 jobs and increase in business output of \$55 million with conservation by on-farm irrigation system improvements and/or water delivery system improvements only. Proposed Projects A and B are the program implementations that represent conservation by on-farm irrigation system improvements and/or water delivery system improvements. Figure 3.14-1 shows the anticipated employment impacts for program year-block 7. Net job increases are anticipated to be 710 jobs for Proposed Project A and 680 for Proposed Project B. Smaller employment gains are anticipated under Proposed Project B because the amount of money being infused into the local economy will be lower under Proposed Project B, which assumes a portion of the conserved water will be transferred to CVWD and/or MWD at a price that is lower than what SDCWA would pay. The construction, trade, and services sectors experience the majority of the employment increases. The net employment increases associated with Proposed Projects A and B represent an increase of about 1.4 percent of the year 2000 total county employment of 48,900. This net employment increase does not consider implementation of the Salton Sea Habitat Conservation Strategy.

As described in Section 2.2.6.7, the Salton Sea Habitat Conservation Strategy has been evaluated in this Final EIR/EIS with the assumption that mitigation water would be generated by fallowing within the IID water service area. Other sources of water could be used but they have not been evaluated in this EIR/EIS.

FIGURE 3.14-1

Net Employment Impacts by Economic Sector from On-farm Irrigation System Improvements and/or Water Delivery System Improvements for Proposed Project A and B Program Year-block 7

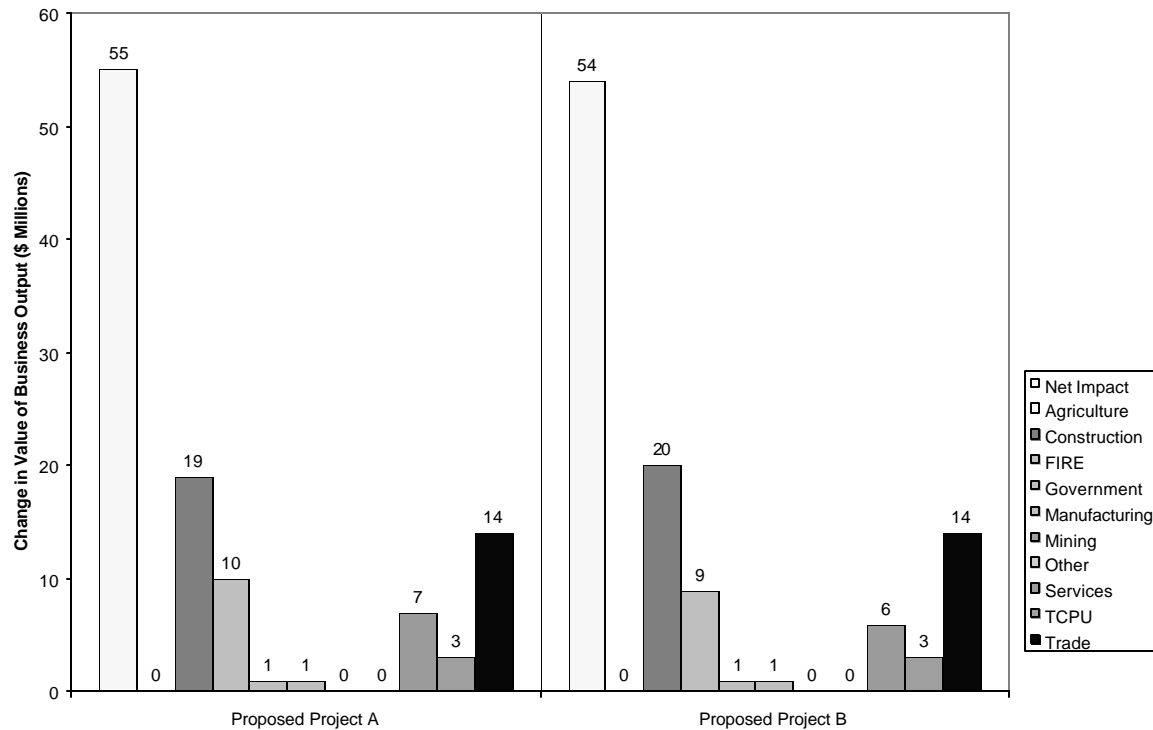


Additionally, under the Proposed Project, the implementation of the Salton Sea Habitat Conservation Strategy in concert with the on-farm irrigation system improvement approach to conserving water for transfer was determined not to be feasible due to the number of total acres that would be needed. This is because the “efficiency conservation” measures require a 1 to 1 ratio of mitigation water to the Sea. Therefore, the combination of only on-farm and/or delivery system efficiency conservation measures required to produce 300 KAFY for transfer plus following within the IID water service area as the sole method of providing the mitigation water associated with the Salton Sea Habitat Conservation Strategy has not been assessed in this Final EIR/EIS.

Figure 3.14-2 shows the beneficial impacts to the value of business output anticipated from Proposed Projects A and B. The net increase in the value of business output is estimated to be \$55 million for Proposed Project A and \$54 million for Proposed Project B. These figures represent approximately 1.2 percent of the estimated \$4.8 billion total value of business output for Imperial County. As is true for employment impacts, the construction, trade and services sectors would experience the majority of the beneficial effects.

FIGURE 3.14-2

Net Value of Business Output Impacts by Economic Sector from On-farm Irrigation System Improvements and/or Water Delivery System Improvements for Proposed Projects A and B Program Year-block 7



Impact S-3: Net loss of 1,400 jobs and reduction in business output of \$98 million with conservation by fallowing only. Proposed Projects C and D are the program implementations that represent conservation by fallowing. Figure 3.14-3 shows the anticipated employment impacts for program year-block 7. Net job decreases are anticipated to be 1,330 jobs for Proposed Project C and 1,400 for Proposed Project D. The agriculture sectors experience the majority of the employment decreases. The net employment decreases associated with Proposed Projects C and D represent about 2.6 percent and 2.8 percent, respectively, of the year 2000 total county employment of 48,900. Focusing on the agricultural sectors alone, Proposed Project C and D would result in net agricultural sector job losses of 1,290 and 1,300 respectively, representing about 12 percent of the total county agricultural employment estimate of 11,300 jobs.

FIGURE 3.14-3

Net Employment Impacts by Economic Sector from Following for Proposed Projects C and D Program Year-block 7

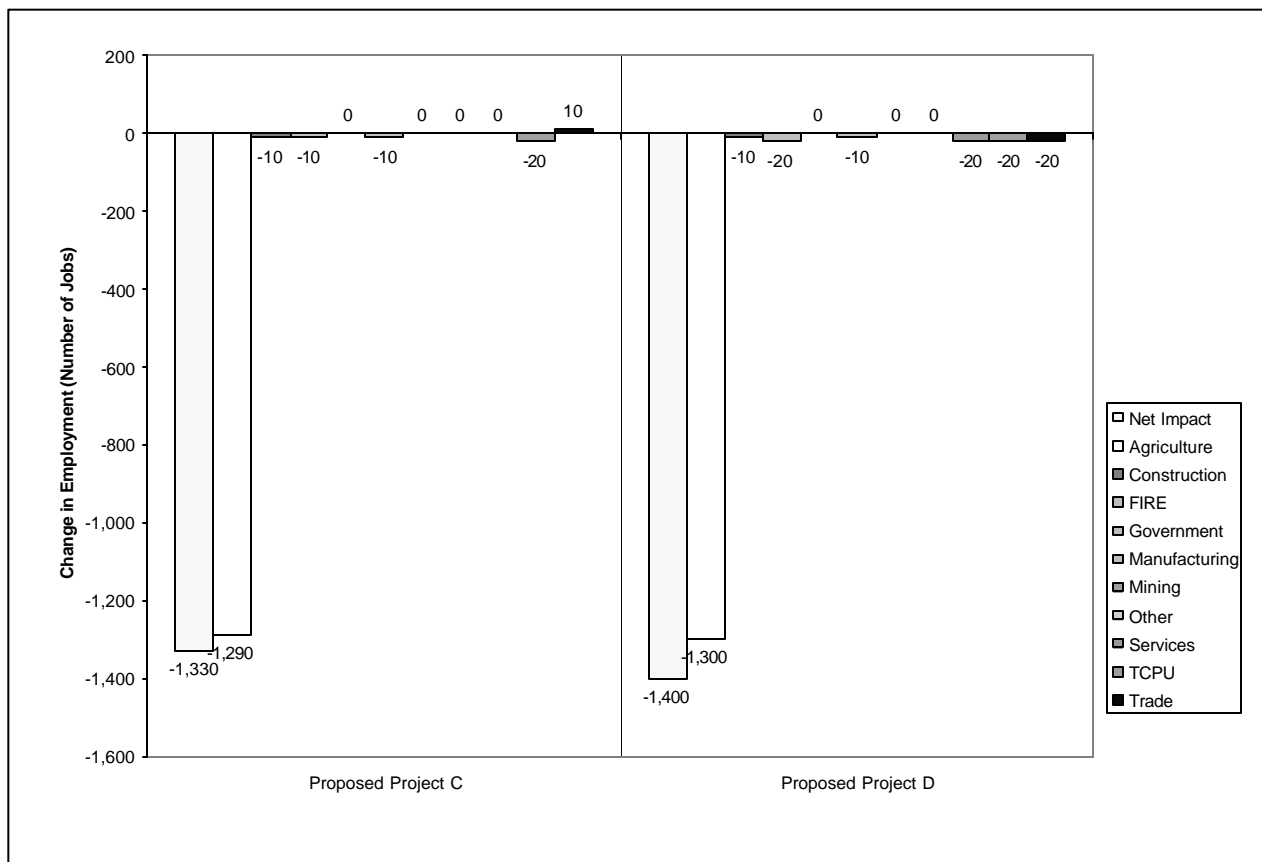


Figure 3.14-4 provides a graphic comparison of the worst-case adverse impacts (Proposed Project D) relative to the county's annual employment levels and 10-year historical employment variation, for the agricultural sector and for net total county employment. From 1991 to 2000, total farm employment ranged from 11,300 to 14,500, a variation of 3,200 jobs. The estimated net change in agricultural jobs associated with Proposed Project D would represent about 41 percent of this annual variability during the past 10 years. During this same time period, total county employment has ranged from 51,000 to 44,100, for a historic variation of 6,900 jobs. The net employment loss of 1,400 jobs associated with Proposed Project D represents about 20 percent of this historical variation.

FIGURE 3.14-4

Comparison of Proposed ProjectD Employment Losses to Annual Employment Levels and 10-year Historic Variation, for Total County Employment and Agricultural Employment

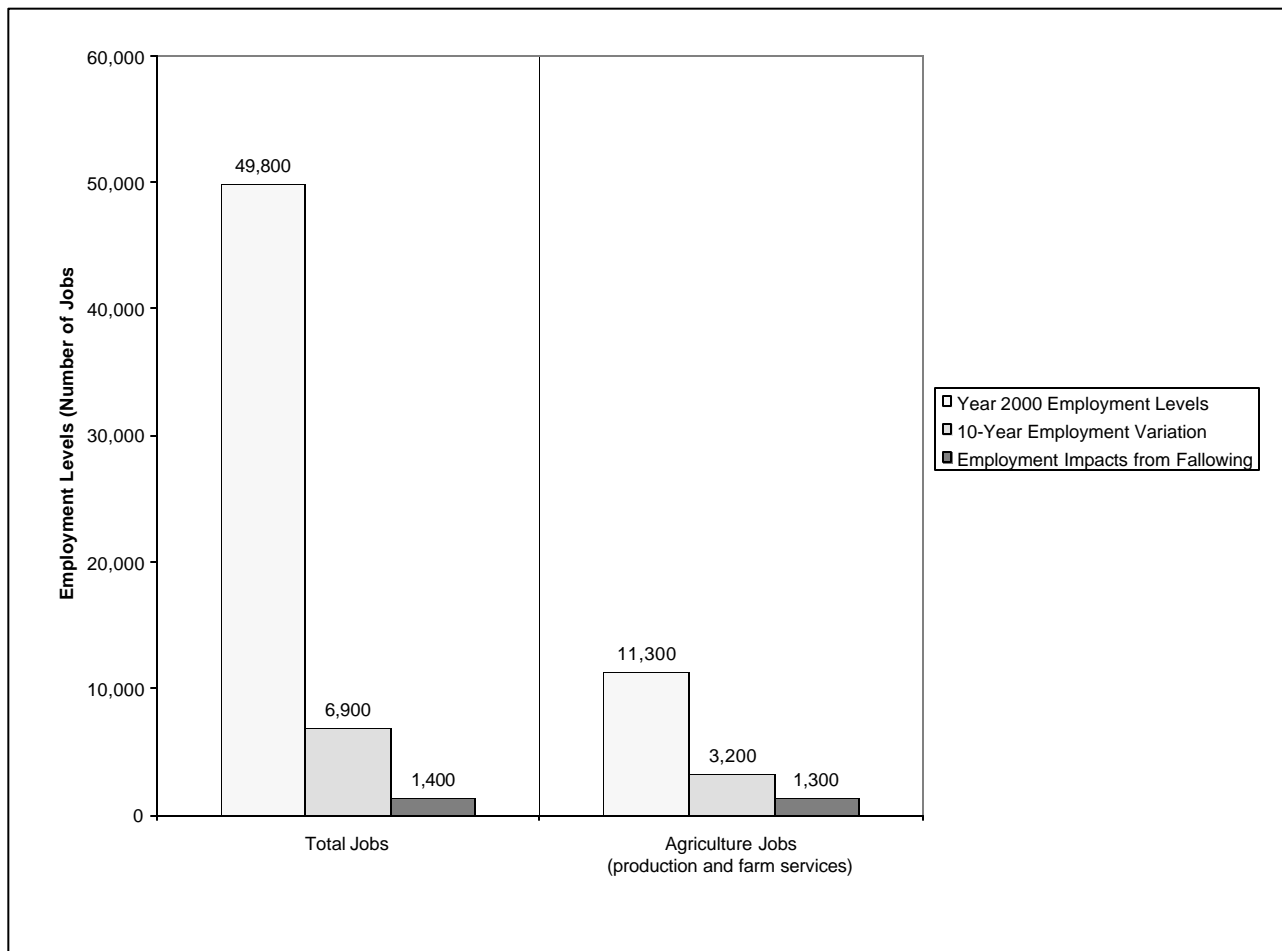
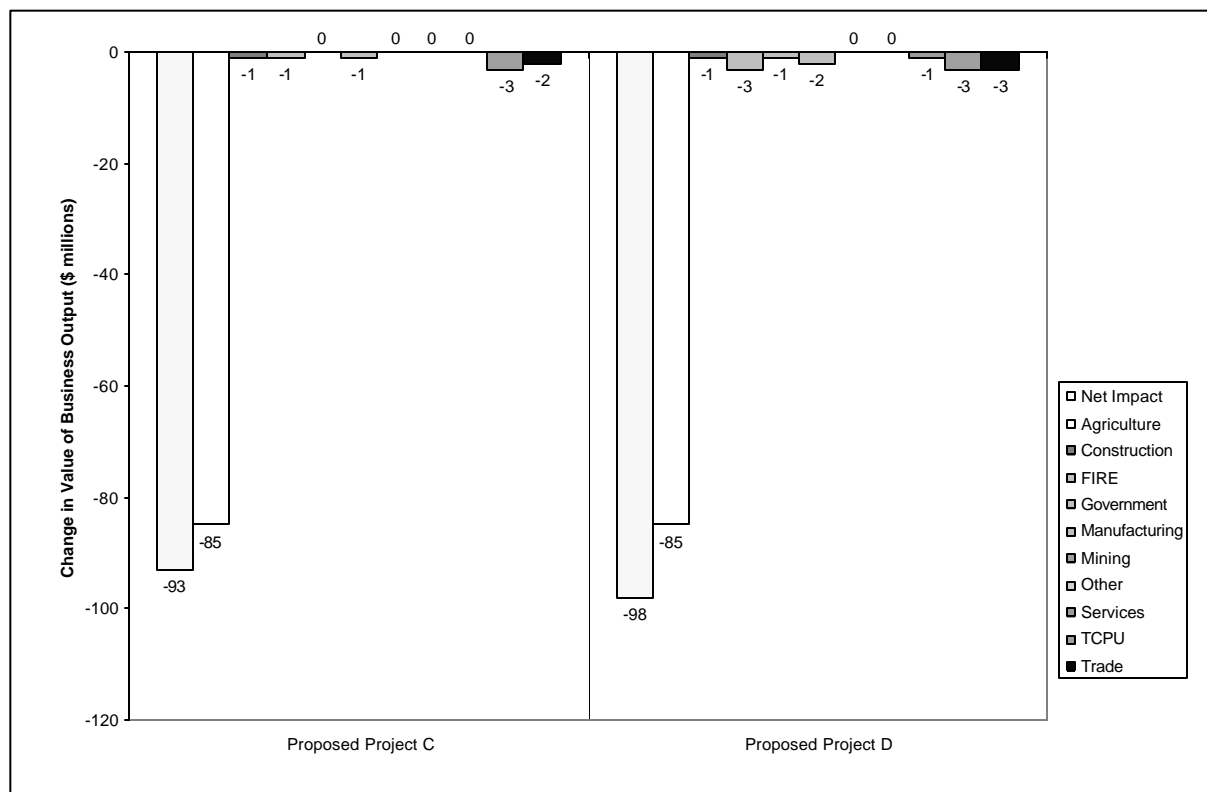


Figure 3.14-5 shows the adverse impacts to the value of business output anticipated from Proposed Projects C and D. The net decrease in the value of business output is estimated to be \$93 million for Proposed Project C and \$98 million for Proposed Project D. These figures represent approximately 2.0 percent of the estimated \$4.8 billion total value of business output for Imperial County. As with the employment impacts the construction, trade, and services sectors would experience the majority of the beneficial effects.

FIGURE 3.14-5

Net Value of Business Output Impacts by Economic Sector from Fallowing for Proposed Projects C and D Program
Year-block 7



Inadvertent Overrun and Payback Policy (IOP)

Impact S-4: Loss of 290 jobs and reduction in business output of \$20 million from conserving IOP water by fallowing only. Conservation of 59 KAFY for the IOP can be accomplished by means of fallowing or other conservation measures. This conservation would be in addition to the up to 300 KAFY that would be conserved for transfer under the Proposed Project. If fallowing is selected, about 9,800 additional acres would be required.

The annual fallowing of 9,800 acres would result in the loss of 290 jobs and a reduction in the value of business output of about \$20 million. The majority of the lost output and employment would be in the agricultural sectors.

Impacts resulting from the implementation of the IOP would be the same for Alternatives 2, 3, and 4; therefore, they are not discussed under each Alternative.

Habitat Conservation Plan (HCP-IID) (IID Water Service Area Portion)

The actions outlined in the HCP (IID Water Service Area Portion) include the creation of up to approximately 700 acres of managed marsh habitat, native tree habitat, and new drain canals to the Salton Sea. The specific locations of these measures are unknown; however, it is reasonable to assume that up to 700 acres of agricultural lands could be converted, causing a reduction of agricultural output. The total loss of employment throughout the regional economy associated with the fallowing of these 700 acres is estimated to be approximately 20 jobs in the agricultural sectors.

Impacts resulting from the implementation of the HCP (IID Water Service Area Portion) would be the same for Alternatives 2, 3, 4; therefore, they are not discussed under each Alternative.

Salton Sea Habitat Conservation Strategy (HCP-SS)

Impact HCP-SS-S-5: Loss of 920 jobs and reduction in business output of \$64 million from fallowing under Salton Sea Habitat Conservation Strategy. The Salton Sea Habitat Conservation Strategy could result in the fallowing of agricultural lands within the IID water service area to obtain mitigation water that would be sent to the Salton Sea to replace the lost inflow caused by the conservation and transfer program. If the conservation and transfer program results in the full 300 KAFY being conserved and transferred, up to 30,500 acres could be fallowed for the Salton Sea Habitat Conservation Strategy. This fallowed acreage would be in addition to any fallowing to conserve water for transfer to SDCWA, CVWD, or MWD. The socioeconomic impact of fallowing for the Salton Sea Habitat Conservation Strategy could include the loss of up to 920 jobs and a reduction in the value of business output in the Imperial County economy of about \$64 million. The lost jobs and lost business output would be concentrated in the agricultural sectors.

As described in Section 2.2.6.7, the Salton Sea Habitat Conservation Strategy has been evaluated in this Final EIR/EIS with the assumption that mitigation water would be generated by fallowing within the IID water service area. Other sources of water could be used but they have not been evaluated in this EIR/EIS.

Aggregate Effects

Table 3.14-10 summarizes the socioeconomic impacts of the Proposed Project, conservation for transfer, IOP, and the HCP. The Proposed Project is presented here assuming that fallowing would be used to conserve water for transfer and to create mitigation water. As described above, under the Proposed Project, the implementation of the Salton Sea Habitat Conservation Strategy in concert with the on-farm irrigation system improvement approach to conserving water for transfer was determined not to be feasible due to the number of total acres that would be needed. This is because the “efficiency conservation” measures require a 1 to 1 ratio of mitigation water to the Sea. Therefore, the combination of only on-farm and/or delivery system efficiency conservation measures required to produce 300 KAFY for transfer plus fallowing within the IID water service area as the sole method of providing the mitigation water associated with the Salton Sea Habitat Conservation Strategy has not been assessed in this Final EIR/EIS.

TABLE 3.14-10

Proposed Project Component and Aggregated Socioeconomic Impacts Using Only Fallowing to Conserve Water for Transfer and for the Salton Sea Habitat Conservation Strategy

Socioeconomic Impact	Transfer Conservation by Fallowing and the Salton Sea Habitat Conservation Strategy
Conservation and Transfer Impacts	Loss of 1,400 jobs and decrease in value of business output of \$98 million.
Fallowing for IOP Impacts	Loss of 290 jobs and \$20 million in value of business output.
HCP Impacts (IID Water Service Area Portion)	Loss of approximately 20 jobs and potential small increase in the value of business output.
HCP Impacts (Salton Sea Habitat Conservation Strategy)	Loss of up to 920 jobs and \$64 million in business output.
Aggregate Impact	Loss of 2,630 jobs and \$182 million in value of business output.

SALTON SEA

Water Conservation and Transfer

Impact S-6: Potential decrease in property values after the year 2035. Implementation of Proposed Projects A through D would result in an acceleration of the adverse effects on Riverside and Imperial Counties as compared to the Baseline conditions (see discussion under Alternative 1, No Project). Under the Proposed Project, all operational boat launching and mooring facilities would become non-operational in year 2007 (using on-farm and/or water delivery system conservation measures), or 2008 (using fallowing to generate conserved water for transfer) (see Section 3.6, Recreation). Under the Baseline they would become non-operational in year 2010. Also, as described in Section 3.2, Biological Resources, the Proposed Project would accelerate the salinization of the Salton Sea, resulting in changes to the Sea's sport fishing industry. Relative to the Baseline, under the Proposed Project, the salinity of the Salton Sea would exceed the levels at which sargo, gulf croaker, and tilapia could successfully reproduce earlier (see Section 3.2 Biological Resources). As for the Baseline condition, continued reproduction by corvina is uncertain at the Sea's current salinity. Above these salinity levels, the populations of these sport fish would be expected to decline and eventually be eliminated. The present value of the lost business output over this period would be about \$790 million (present value of \$80 million 1987 dollars escalated at 2.2 percent and discounted at 5.4 percent for the 12 years 2012 to 2023).

However, implementation of the Salton Sea Habitat Conservation Strategy would result in the elevation of the Salton Sea reaching -230 feet msl in the year 2017. This would result in a delay of the occurrence of the impact by 7 years compared to the Baseline and by 9 to 10 years compared to the Proposed Project without the Salton Sea Habitat Conservation Strategy. In the year 2034, the elevation would decline below the Baseline elevation of -235 and ultimately reach an elevation of just below -240 feet msl. The increase in exposed shoreline along with any real or perceived increases in the magnitude or frequency of dust storms, noxious odors, or adverse visual experiences could put downward pressure on the value of personal and commercial properties in communities closely tied to the Salton Sea.

Communities that would be most likely to experience such adverse impacts would include Salton City, Bombay Beach, Desert Shores, and North Shores.

This annual lost contribution to the economies of the area surrounding the Salton Sea is derived from estimates published in a report to CDFG (CIC 1989). This annual contribution to the regional economy associated with recreational uses of the Salton Sea should be considered an upper bound. It is based on a 1987 survey that estimated annual visitation of 2.6 million visitor days with a daily level of local expenditures of almost \$7 per person per day. The report indicates that almost three-quarters of the local expenditures are made on groceries; gasoline and transportation; meals and snacks out; and parking, camping, or R.V. fees.

3.14.3.4 Alternative 1: No Project

LOWER COLORADO RIVER

Under the No Project Alternative, the existing pattern of socioeconomic conditions in the LCR subregion would be maintained, including the historic variation of change in LCR flows.

IID WATER SERVICE AREA AND AAC

Under the No Project Alternative, the existing socioeconomic conditions of Imperial County would continue in a pattern similar to historic conditions. This would include the continuation of the historic fluctuations in farm and non-farm employment, as described in Section 3.14.2.

SALTON SEA

Under the Baseline conditions, which are defined and modeled in Section 3.1, Hydrology and Water Quality, the level of the Salton Sea would continue to decrease and the salinity would continue to increase. The No Project Alternative is essentially the same as the Baseline in terms of the rate of decrease of the elevation and surface area of the Sea and the resulting effects on recreation. Under the Baseline, all operational boat launching and mooring facilities would become non-operational in year 2010 (see Section 3.6, Recreation). Also, as described in Section 3.2, Biological Resources, under Baseline conditions, the Salton Sea is predicted to become too saline to support successful reproduction of sargo, gulf croaker, and tilapia in years 2008, 2015, and 2023, respectively. Continued reproduction by corvina is uncertain at the Sea's current salinity. Above these salinity levels, the population of sport fish is expected to decline and eventually be eliminated. A worst-case scenario would be that all recreation activity, which resulted in approximately \$80 million dollars of business output in 1987, would be lost to the Imperial and Riverside county economies every year after the ultimate decline of the sport fishing industry, under the Baseline and Alternative 1, No Project.

This annual contribution to the economies of the area surrounding the Salton Sea is an upper bound, which was derived from estimates published in a report to CDFG (CIC 1989). The contribution is based on a 1987 survey that estimated annual visitation of 2.6 million visitor days with a daily level of local expenditures of almost \$7 per person per day. The report indicates that almost three-quarters of the local expenditures are made on groceries; gasoline and transportation; meals and snacks out; and parking, camping, or R.V. fees.

In addition to anticipated adverse regional economic impacts attributable to the loss of recreation activities, the lower Sea levels predicted would result in an increase in the amount of exposed Salton Sea shoreline. The increase in exposed shoreline along with any real or perceived increases in the magnitude or frequency of dust storms, noxious odors, or adverse visual experiences would put downward pressure on the value of personal and commercial properties in communities closely tied to the Salton Sea. Communities that would be most likely to experience such adverse impacts would include Salton City, Bombay Beach, Desert Shores, and North Shores.

3.14.3.5 Alternative 2 (A2): Water Conservation and Transfer of Up To 130 KAFY to SDCWA (On-farm Irrigation System Improvements as Exclusive Conservation Measure)

In Alternative 2, IID would conserve and transfer 130 KAFY to SDCWA. This represents the minimum quantity of water that could be conserved and transferred under the terms and conditions of the IID/SDCWA Transfer Agreement. Alternative 2 involves conserving all 130 KAFY of water through on-farm irrigation system improvements. This would require the installation and operation of TRS on 2,441 fields of 80 acres each.

LOWER COLORADO RIVER

Water Conservation and Transfer

Same as Impact S-1: Potential increase in power rates at Headgate Rock Dam as a result of decrease in LCR flows. The same impact to Headgate Rock Dam rates would occur under Alternative 2 as described under the Proposed Project; however, because the amount of water conserved and transferred under Alternative 2 is less than under the Proposed Project, the impacts under Alternative 2 would be less.

IID WATER SERVICE AREA AND AAC

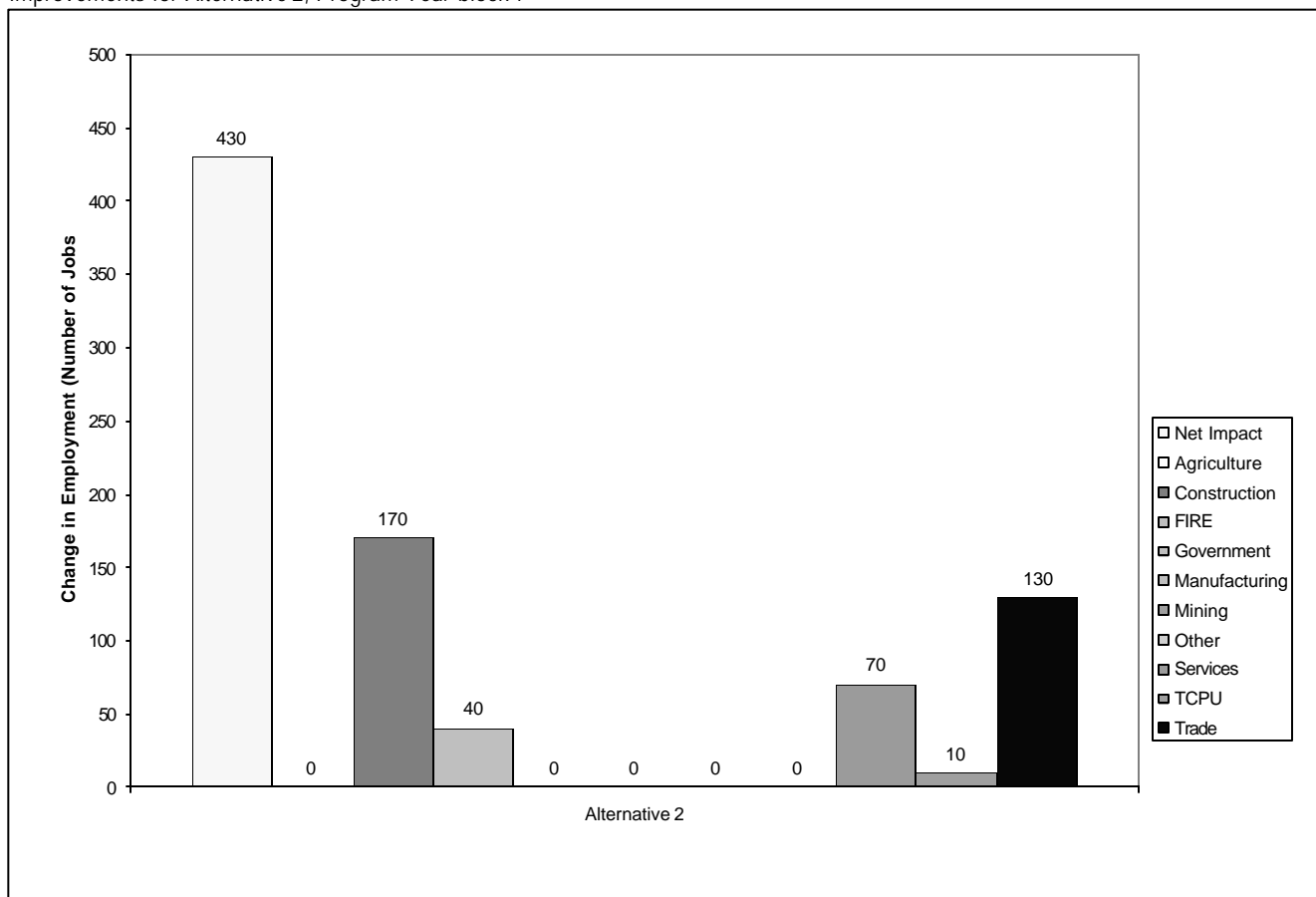
Water Conservation and Transfer

Impact A2-S-1: Net addition of 430 jobs and increase in business output of \$33 million with conservation by on-farm irrigation system improvements and/or water delivery system improvements only. Figure 3.14-6 shows the employment impacts of Alternative 2. Under Alternative 2, a total of 430 jobs would be created, with the majority in the construction, trade, and services sectors. No sectors of the economy would see decreases in employment. The net increase in employment expected under Alternative 2 is less than 1 percent over year 2000 employment levels.

Figure 3.14-7 shows the effect of Alternative 2 on the value of business output. The total county economy would see an expansion of about \$33 million, with the construction and trade sectors accounting for the majority of the increase. This net increase represents approximately 0.7 percent of the year 2000 total county output estimate of \$4.8 billion. No economic sectors would see reductions in the value of goods and services produced under Alternative 2.

FIGURE 3.14-6

Net Employment Impacts by Economic Sector from On-farm Irrigation System Improvements and/or Water Delivery System Improvements for Alternative 2, Program Year-block 7

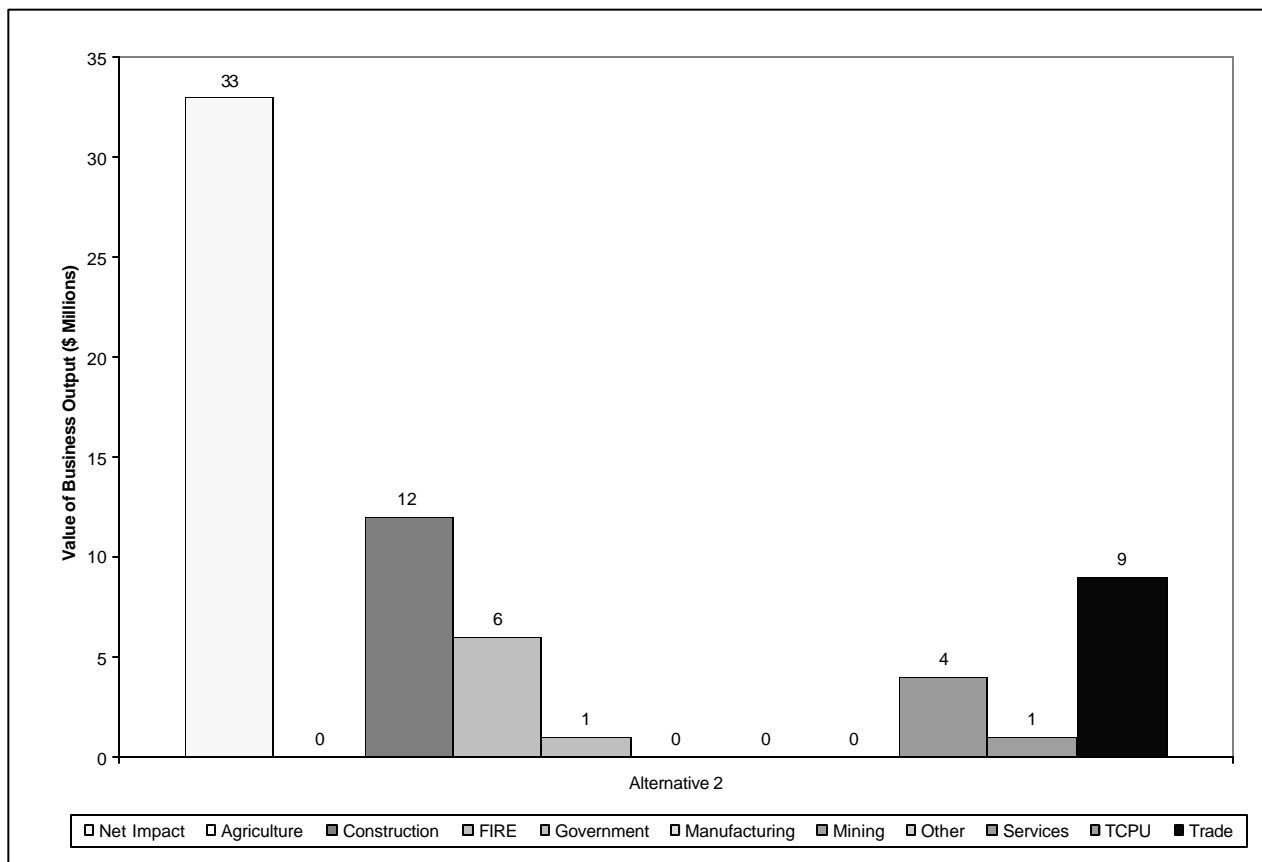


Salton Sea Habitat Conservation Strategy (HCP-SS)

Impact A2-HCP-SS-S-2: Loss of 1,220 jobs and reduction in business output of \$85 million from fallowing under Salton Sea Habitat Conservation Strategy, assuming fallowing is not used to conserve water for transfer. The Salton Sea Habitat Conservation Strategy could result in the fallowing of agricultural lands within the IID water service area to obtain mitigation water that would be sent to the Salton Sea to replace the lost inflow caused by the conservation and transfer program. If the conservation and transfer program results in 130 KAFY being conserved and transferred, up to 40,600 acres could be fallowed for the Salton Sea Habitat Conservation Strategy. This fallowed acreage would be in addition to any fallowing to conserve water for transfer to SDCWA, CVWD, or MWD. The socioeconomic impact of fallowing for the Salton Sea Habitat Conservation Strategy could include the loss of up to 1,220 jobs and a reduction in the value of business output in the Imperial County economy of about \$85 million. The lost jobs and lost business output would be concentrated in the agricultural sectors.

FIGURE 3.14-7

Net Value of Business Output Impacts by Economic Sector from On-farm Irrigation System Improvements and/or Water Delivery System Improvements for Alternative 2, Program Year-block 7



SALTON SEA

Water Conservation and Transfer

Same as Impact S-6: Potential decrease in property values after the year 2035. The conservation and transfer of 130 KAFY would result in an acceleration of the adverse effects on Riverside and Imperial Counties, compared to the Baseline conditions (see discussion under Alternative 1, No Project). The present value of lost business output over this period would be about \$790 million (present value of \$80 million 1987 dollars escalated at 2.2 percent and discounted at 5.4 percent for the 12 years 2012 to 2023).

This annual lost contribution to the economies of the area surrounding the Salton Sea is derived from estimates published in a report to CDFG (CIC 1989). This annual contribution to the regional economy associated with recreational uses of the Salton Sea should be considered an upper bound. It is based on a 1987 survey that estimated annual visitation of 2.6 million visitor days with a daily level of local expenditures of almost \$7 per person per day. The report indicates that almost three-quarters of the local expenditures are made on groceries; gasoline and transportation; meals and snacks out; and parking, camping, or R.V. fees.

However, with the implementation of the mitigation measures described in Section 3.6, Recreation, along with the Salton Sea Habitat Conservation Strategy, Alternative 2 would have no impact to socioeconomic resources derived from recreation activities attributed to the Salton Sea. After year 2035, Alternative 2 would result in Sea levels lower than those predicted in the Baseline. This potential future decrease in the level of the Salton Sea could put downward pressure on property values after the year 2035.

3.14.3.6 Alternative 3 (A3): Water Conservation and Transfer of Up To 230 KAFY to SDCWA, CVWD, and/or MWD (All Conservation Measures)

Under Alternative 3, up to 230 KAFY would be conserved, with 130 KAFY transferred to SDCWA. One hundred KAFY would be transferred to CVWD and/or MWD. To represent the full range of effects for this Alternative, two implementations have been analyzed. Alternative 3A involves conserving all 230 KAFY of water through on-farm irrigation system improvements. The conservation of this quantity of water would require the installation and operation of on-farm irrigation system improvements on 4,319 fields of 80-acres each. The 100 KAFY of water conserved and transferred for the QSA would be transferred to MWD. This situation would benefit IID and the local economy because under the terms of the QSA, MWD would pay IID a higher price for transferred water.

Alternative 3B represents the worst-case scenario for this Alternative, conserving 230 KAFY by land fallowing. This would require an amendment to the IID /SDCWA transfer agreement which stipulates at least 130 KAFY be conserved by on-farm system improvements. Conserving 230 KAFY would require the fallowing of about 40,850 acres of land. As with Alternative 3A, 130 KAFY would be transferred to SDCWA. Of the remaining 100 KAFY, 50 KAFY would be transferred to CVWD, and the other 50 KAFY would be transferred to CVWD and/or MWD.

LOWER COLORADO RIVER

Water Conservation and Transfer

Same as Impact S-1: Potential increase in power rates at Headgate Rock Dam as a result of decrease in LCR flows. The same impact to Headgate Rock Dam rates would occur under Alternative 3 as described under the Proposed Project; however, because the amount of water conserved and transferred under Alternative 3 is less than under the Proposed Project, the impacts under Alternative 3 would be less.

IID WATER SERVICE AREA AND AAC

Water Conservation and Transfer

Impact A3-S-1: Net addition of 660 jobs and increase in business output of \$51 million with conservation by on-farm irrigation system improvements and/or water delivery system improvements only. The net impact of conservation by on-farm irrigation system improvements and/or water delivery system improvements is represented by Alternative 3A. Figure 3.14-8 shows the net employment impacts by economic sector. A total of 660 jobs would be anticipated to be created, representing a 1.3 percent increase of year 2000 employment levels. The construction, trade, and services sectors would experience the majority of the beneficial effects, and no economic sectors would experience loss of jobs.

FIGURE 3.14-8

Net Employment Impacts by Economic Sector from On-farm Irrigation System Improvements and/or Water Delivery System Improvements for Alternative 3 A, Program Year-block 7

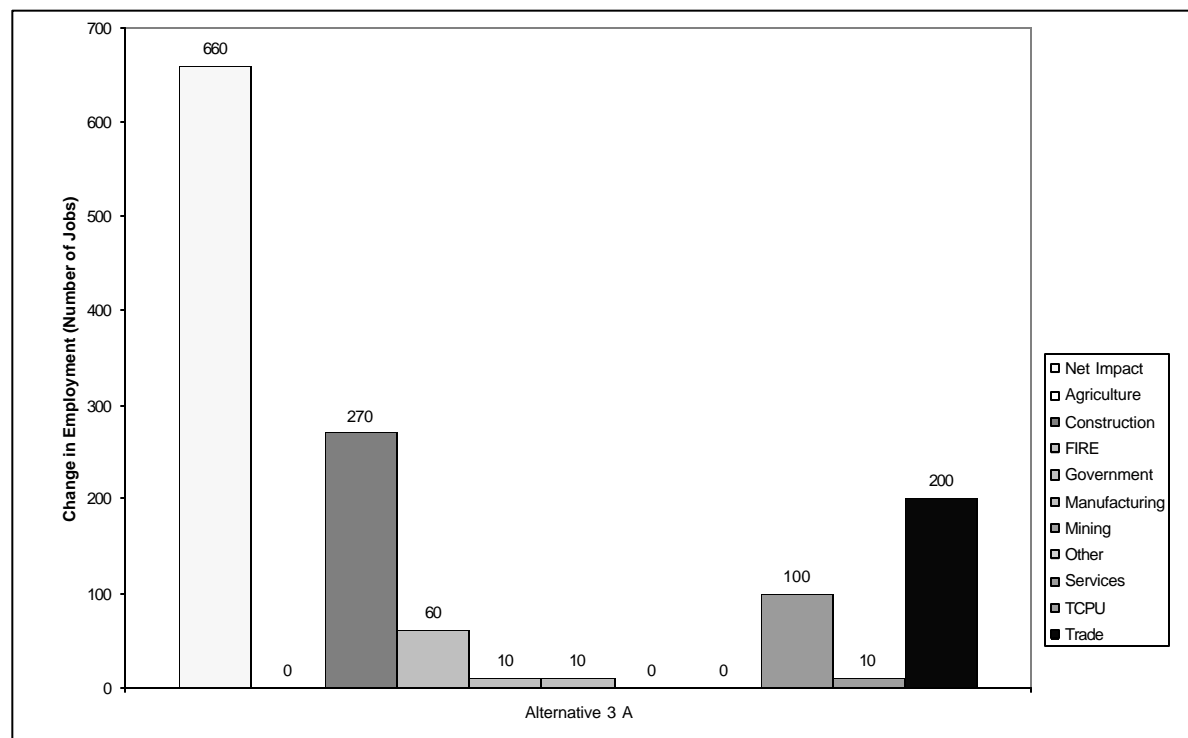
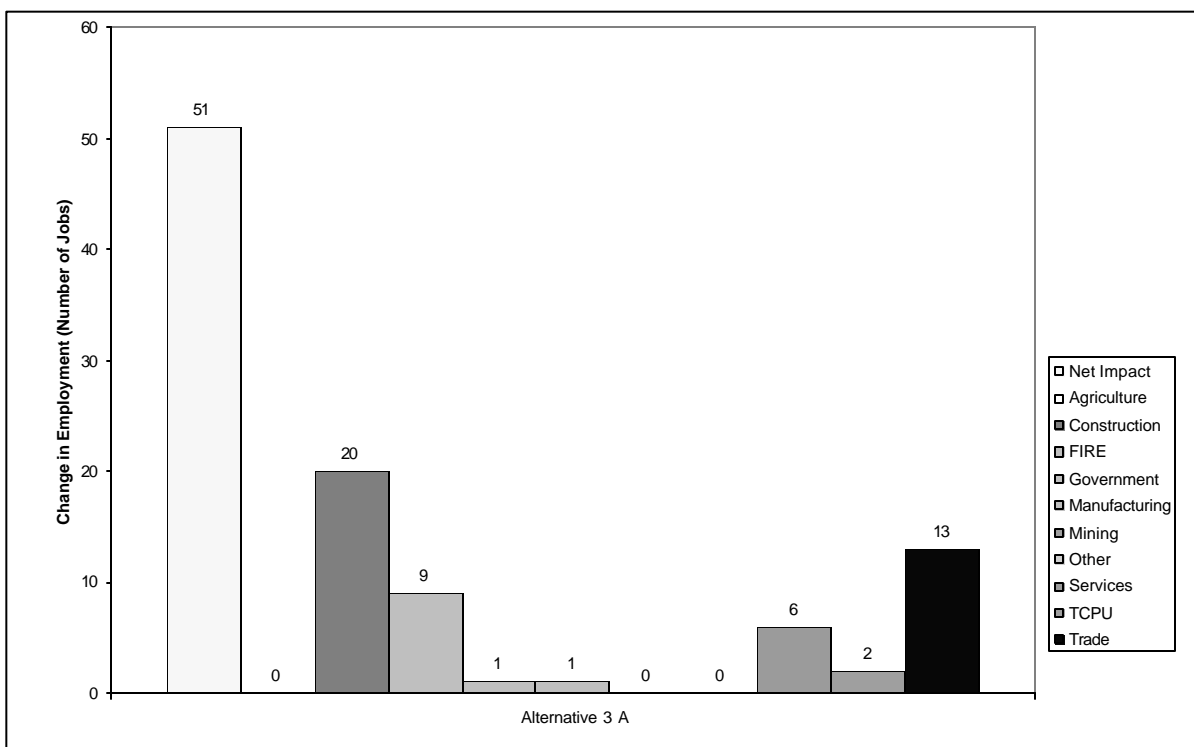


Figure 3.14-9 shows the net increases in the value of business output associated with conserving water by on-farm irrigation system improvements and/or water delivery system improvements. The value of business output would increase by approximately \$51 million, with the construction, trade, and service sectors seeing the majority of the beneficial effect. This increased business output represent about a 1 percent increase over the year 2000 estimate of \$4.8 billion.

FIG 3.14-9

Net value of business output impacts by economic sector from on-farm irrigation system improvements and/or water delivery system improvements for Alternative 3 A, program year-block 7



Impact A3-S-2: Net loss of 1,090 jobs and reduction in business output of \$76 million with conservation by following only. Figure 3.14-10 shows the anticipated employment impacts for Alternative 3 B, program year-block 7. Net job decreases are anticipated to be 1,090 jobs. The agriculture sectors experience the majority of the employment decreases. The net employment decrease of 1,090 jobs is about 2.2 percent of the year 2000 total county employment of 48,900. Focusing on the agricultural sectors alone, a total of 990 agricultural sector jobs are assumed to be lost, representing about 8 percent of the total county agricultural employment estimate of 11,300 jobs.

FIG 3.14-10

Net employment impacts by economic sector from following for Alternative 3 B, program year-block 7

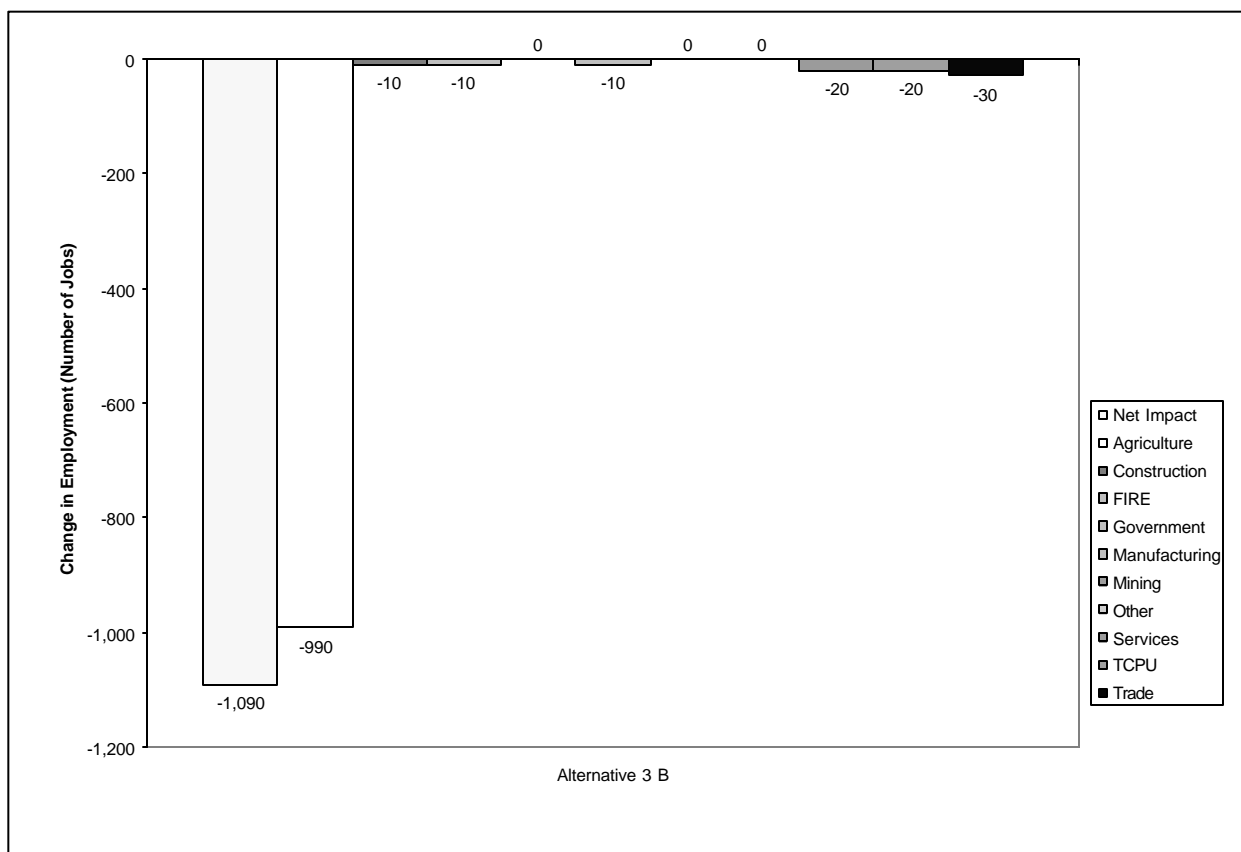


Figure 3.14-11 provides a graphic comparison of the adverse impacts of following for conservation relative to the counties' annual employment levels and 10-year historical employment variation, for the agricultural sector and for net total county employment. From 1991 to 2000, total farm employment has ranged from 11,300 to 14,500 for a variation of 3,200 jobs. The estimated change in agricultural jobs associated with Alternative 3 B represents about 31 percent of this annual variability over the past 10 years. During this same time period, total county employment has ranged from 51,000 to 44,100, a historic variation of 6,900 jobs. The net employment loss associated with Alternative 3 B of 1,090 jobs represents about 16 percent of this historical variation.

FIGURE 3.14-11

Comparison of Alternative 3 B Employment Losses to Annual Employment Levels and 10-year Historic Variation, for Total County Employment and Agricultural Employment

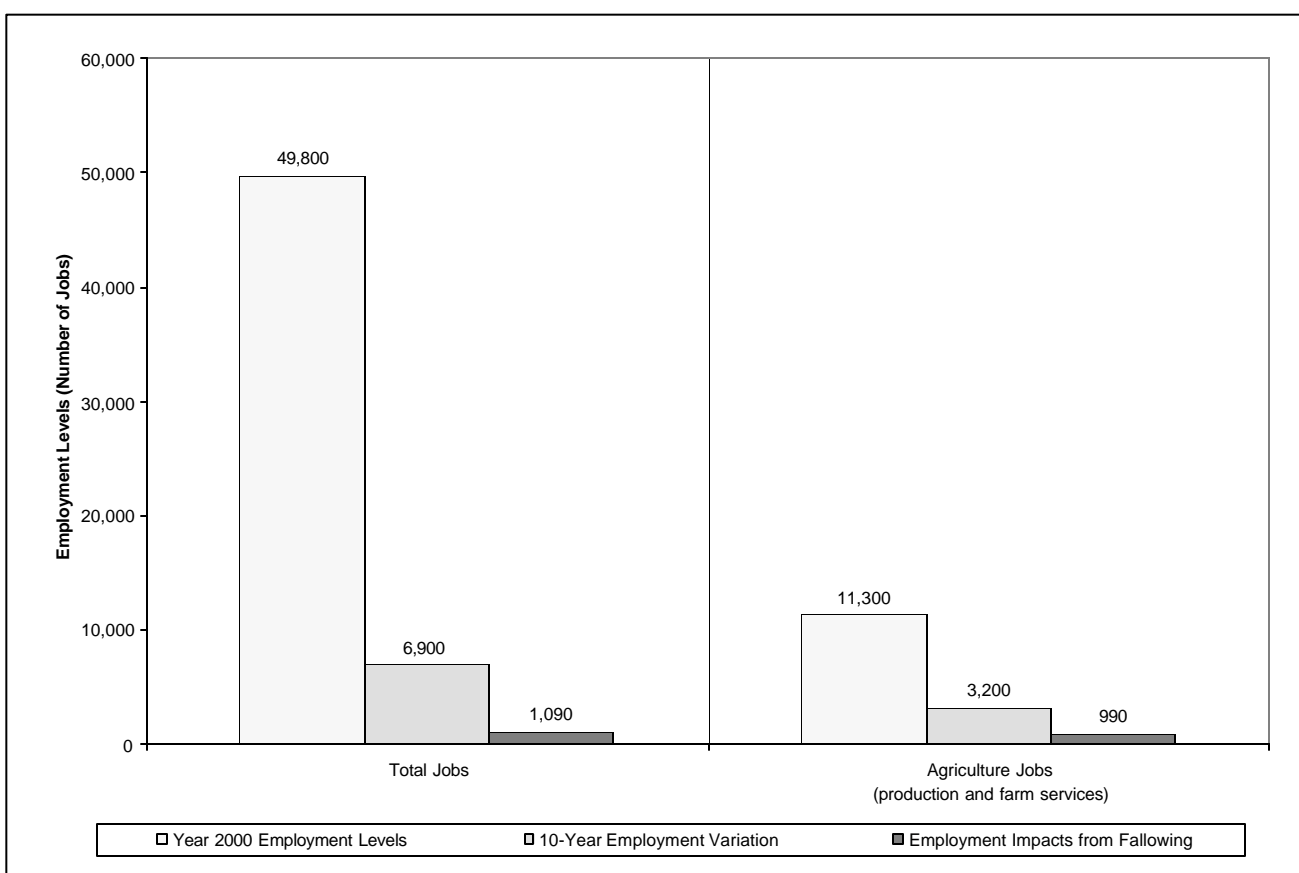
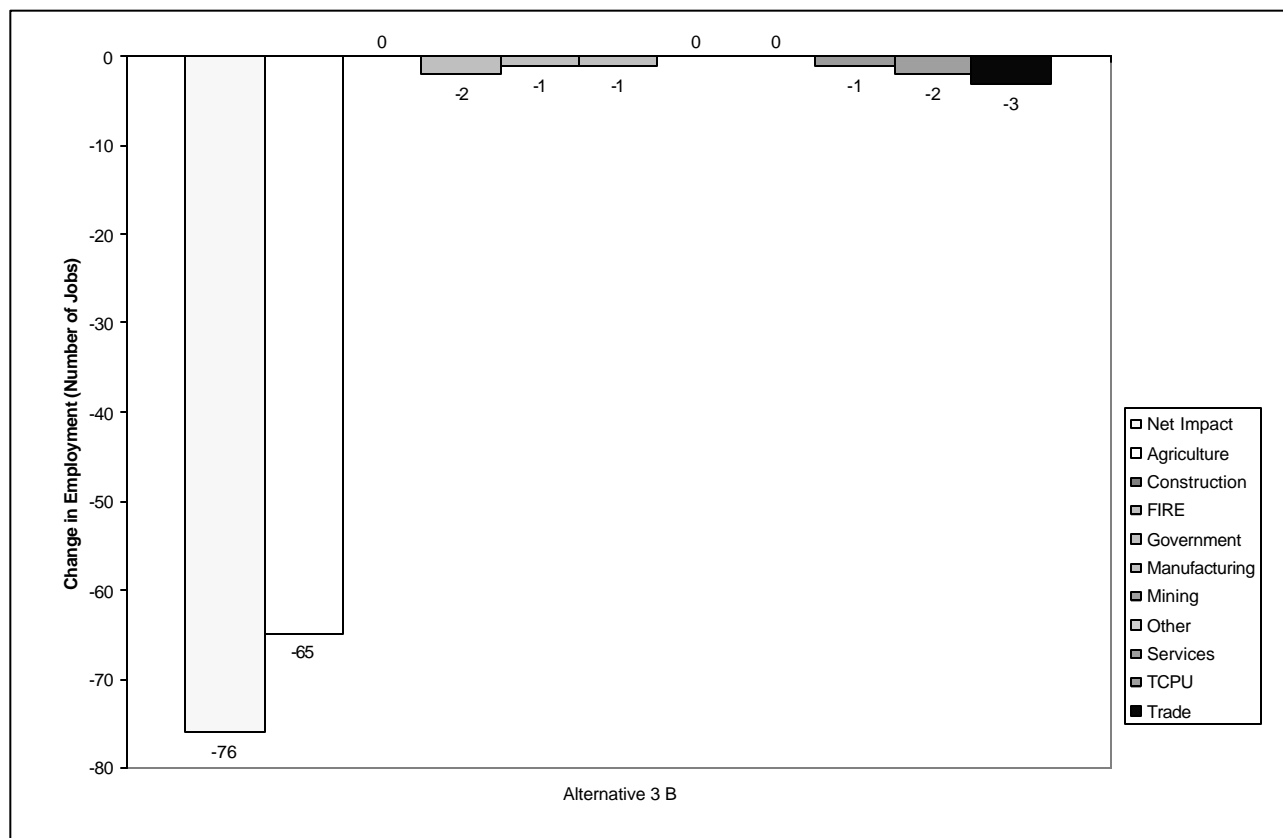


Figure 3.14-12 shows the adverse impacts to the value of business output anticipated from Alternative 3 B. The net decrease in the value of business output is estimated to be \$76 million, representing approximately 1.6 percent of the estimated \$4.8 billion total value of business output for Imperial County. As is true for employment impacts, the agricultural sectors would experience the majority of the adverse effects.

FIGURE 3.14-12

Net Value of Business Output Impacts by Economic Sector from Fallowing for Alternative 3 B, Program Year-block 7



Salton Sea Habitat Conservation Strategy (HCP-SS)

Impact A3-HCP-SS-S-3: Loss of 750 to 2,020 jobs and reduction in business output of \$52 to \$141 million from fallowing under Salton Sea Habitat Conservation Strategy, depending on method used to conserve water for transfer. The Salton Sea Habitat Conservation Strategy could result in the fallowing of agricultural lands within the IID water service area to obtain mitigation water that would be sent to the Salton Sea to replace the lost inflow caused by the conservation and transfer program. If the conservation and transfer program results in 230 KAFY being conserved and transferred via fallowing, up to 25,100 acres could be required to be fallowed for the Salton Sea Habitat Conservation Strategy (if fallowing is the source of mitigation water). This fallowed acreage would be in addition to any fallowing to conserve water for transfer to SDCWA, CVWD, or MWD. The socioeconomic impact of fallowing for the Salton Sea Habitat Conservation Strategy (if fallowing is used to conserve water for transfer) could include the loss of up to 750 jobs and a reduction in the value of business

output in the Imperial County economy of about \$52 million. The lost jobs and lost business output would be concentrated in the agricultural sectors.

If on-farm or water delivery system measures are used to conserve water for transfer to SDCWA, CVWD, or MWD, the Salton Sea Habitat Conservation Strategy could result in the fallowing of 67,300 acres of fallowed agricultural lands. This fallowed acreage would be in addition to any fallowing to conserve water for transfer to SDCWA, CVWD, or MWD. Under this scenario, the socioeconomic impact of fallowing for the Salton Sea Habitat Conservation Strategy could include the loss of up to 1,220 jobs and a reduction in the value of business output in the Imperial County economy of about \$85 million. The lost jobs and lost business output would be concentrated in the agricultural sectors.

SALTON SEA

Water Conservation and Transfer

Same as Impact S-6: Potential decrease in property values after the year 2035. The conservation and transfer of up to 230 KAFY would result in an acceleration of the adverse effects on Riverside and Imperial Counties, compared to the Baseline conditions (see discussion under Alternative 1, No Project). The present value of the lost business output over this period would be about \$790 million (present value of \$80 million 1987 dollars escalated at 2.2 percent and discounted at 5.4 percent for the 12 years 2012 to 2023).

This annual lost contribution to the economies of the area surrounding the Salton Sea is derived from estimates published in a report to CDFG (CIC 1989). This annual contribution to the regional economy associated with recreational uses of the Salton Sea should be considered an upper bound. It is based on a 1987 survey that estimated annual visitation of 2.6 million visitor days with a daily level of local expenditures of almost \$7 per person per day. The report indicates that almost three-quarters of the local expenditures are made on groceries; gasoline and transportation; meals and snacks out; and parking, camping, or R.V. fees.

However, with the implementation of the mitigation measures described in Section 3.6, Recreation, along with the Salton Sea Habitat Conservation Strategy, Alternative 3 would have no impact to socioeconomic resources derived from recreation activities attributed to the Salton Sea. After year 2035, Alternative 3 would result in Sea levels lower than those predicted in the Baseline. This potential future decrease in the level of the Salton Sea could put downward pressure on property values after the year 2035.

3.14.3.7 Alternative 4 (A4): Water Conservation and Transfer of Up To 300 KAFY to SDCWA, CVWD, and/or MWD (Fallowing As Exclusive Conservation Measure)

LOWER COLORADO RIVER

Water Conservation and Transfer

Same as Impact S-1: Potential increase in power rates at Headgate Rock Dam as a result of decrease in LCR flows. The same impact to Headgate Rock Dam rates would occur under Alternative 4 as described under the Proposed Project.

IID WATER SERVICE AREA AND AAC

Water Conservation and Transfer

Same as Impact S-3: Net loss of 1,400 jobs and reduction in business output of \$98 million with conservation by fallowing only. Alternative 4 assumes that a total of 300 KAFY would be conserved by fallowing. For Alternative 4 to be implemented, the IID/SDCWA Transfer Agreement would have to be modified. These are the same as the worst-case conditions analyzed for the Proposed Project, in which fallowing is used to conserve all water for transfer. The reader is directed to the impact discussion of Proposed Projects C and D for the impacts of Alternative 4.

Salton Sea Habitat Conservation Strategy (HCP-SS)

Same as Impact HCP-SS-S-5: Loss of 920 jobs and reduction in business output of \$64 million from fallowing under Salton Sea Habitat Conservation Strategy. The Salton Sea Habitat Conservation Strategy could result in the fallowing of agricultural lands within the IID water service area to obtain mitigation water that would be sent to the Salton Sea to replace the lost inflow caused by the conservation and transfer program. If the conservation and transfer program results in the full 300 KAFY being conserved and transferred, up to 30,500 acres could be fallowed for the Salton Sea Habitat Conservation Strategy. This fallowed acreage would be in addition to any fallowing to conserve water for transfer to SDCWA, CVWD, or MWD. The socioeconomic impact of fallowing for the Salton Sea Habitat Conservation Strategy could include the loss of up to 920 jobs and a reduction in the value of business output in the Imperial County economy of about \$64 million. The lost jobs and lost business output would be concentrated in the agricultural sectors.

SALTON SEA

Water Conservation and Transfer

Same as Impact S-6: Potential decrease in property values after the year 2035. The conservation and transfer of up to 300 KAFY would result in an acceleration of the adverse effects on Riverside and Imperial Counties as compared to the Baseline conditions (see discussion under Alternative 1, No Project). The present value of the lost business output over this period would be about \$790 million (present value of \$80 million 1987 dollars escalated at 2.2 percent and discounted at 5.4 percent for the 12 years 2012 to 2023).

This annual lost contribution to the economies of the area surrounding the Salton Sea is derived from estimates published in a report to CDFG (CIC 1989). This annual contribution to the regional economy associated with recreational uses of the Salton Sea should be considered an upper bound. It is based on a 1987 survey that estimated annual visitation of 2.6 million visitor days with a daily level of local expenditures of almost \$7 per person per day. The report indicates that almost three-quarters of the local expenditures are made on groceries; gasoline and transportation; meals and snacks out; and parking, camping, or R.V. fees.

However, with the implementation of the mitigation measures described in Section 3.6, Recreation, along with the Salton Sea Habitat Conservation Strategy, Alternative 4 would have no impact to socioeconomic resources derived from recreation activities attributed to the Salton Sea. After year 2035 Alternative 4 would result in Sea levels lower than those predicted in the Baseline. This potential future decrease in the level of the Salton Sea could put downward pressure on property values after the year 2035.